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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/734,117

12/15/2003

Daniel Yellin

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EXAMINER

AGHDAM, FRESHTEH N

ART UNIT

PAPER NUMBER

2611

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/734,117	Applicant(s) YELLIN ET AL.	
	Examiner FRESHTEH N. AGHDAM	Art Unit 2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 June 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 26 and 33-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 26 and 33-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Affidavit or Declaration Under 37 CFR 1.131:

The affidavit filed on June 12, 2008 under 37 CFR 1.131 has been considered but is ineffective to overcome the references used in the previous office action because:

a. The declaration is signed only by one of the inventors. Applicants fail to submit sufficient documents showing the other inventor refused to sign the request or could not be reached after diligent efforts.

b. The declaration, applicant's remarks, the inventor, Exhibit A and Exhibit B, point out to four different dates prior to September 16, 2003 (filing date of the primary reference used by the examiner). Applicants are required to clarify the date that the invention is conceived.

Response to Arguments

Applicant's arguments filed June 12, 2008 have been fully considered but they are not persuasive.

Applicant's Argument(s):

Regarding dependent claim 35, pages 5-6, the applicant argues "The Examiner has not identified any motivation, suggestion, or reason in Vilcocq, Liu, or Hasson (or any other references) that would have prompted one skilled in the art to use the input to the VCO 13 (instead of its output, as disclosed by Vilcocq) to perform the alleged

Art Unit: 2611

optimization. The rejection, thus, is based on impermissible hindsight reconstruction using the Applicant's disclosure as a roadmap to achieve the claimed invention."

Examiner's Response:

In response to applicant's argument that there is no suggestion or reason to use the input to the VCO 13 (instead of its output, as disclosed by Vilcocq), the examiner disagrees with the applicant because the optimization criteria of Vilcocq not only is related to the input of the voltage-controlled oscillator (i.e. output of the loop filter) but also is related to the input to the voltage-controlled oscillator because the output to the PLL includes the output to the VCO in addition to the input to the VCO.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

Art Unit: 2611

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Liu (US 2005/0058219), and further in view of Hasson (US 2003/0123566).

As to claim 26, Liu discloses a communication device comprising: a baseband processor (Fig. 5, block 500; Par. 48-49); an antenna (Fig. 5, means 506); a power amplifier coupled to said antenna (means 504), the power amplifier being configured to receive a first output of said baseband processor from a signal path that includes a fractional-N-sigma-delta modulator (means 501-503) having a pre-emphasis filter (means 521 and 522) to receive a second output of the baseband processor, and to amplify the first output with a gain that is controlled by a varying amplitude of the second output (Par. 48-51). Liu does not expressly disclose that the antenna is a dipole antenna. Hasson discloses a communication device that utilizes a dipole antenna (Fig. 1, means 108; Claim 6); a power amplifier coupled to the antenna (means 106); and a sigma-delta modulator coupled to the power amplifier (means 102). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teaching of Hasson with Liu in order to transmit the modulated signal via a dipole antenna since dipole antennas show high antenna efficiency and integration flexibility.

Claims 26 and 33-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu and Hasson, further in view of Vilcocq et al (US 2004/0041638).

As to claim 33, Liu and Hasson disclose all the subject matter claimed in claim 26, except for the emphasis filter is optimized according to predefined optimization

Art Unit: 2611

criteria. Vilcocq discloses a frequency phase modulation (e.g. fractional-N-sigma-delta modulator) that includes a pre-emphasis filter, wherein a transfer function of the pre-emphasis filter is optimized according to predefined optimization criteria (Par. 6, 12-13, and 54-55). Therefore, it would have been obvious to one of ordinary skill in the art to modify the system of Liu and Hasson by utilizing a pre-emphasis filter that is adaptive in order to adjust the digital values to compensate at least for variations in voltage, temperature, and/ or aging (Par. 38-39).

As to claim 34, Liu discloses that the transfer function of the pre-emphasis filter is a finite impulse response (Par. 25).

As to claim 35, Vilcocq further discloses that determining the transfer function includes determining the transfer function to be optimized according to the predefined optimization criteria that includes a mean squared error of an input to the filter and an output to the voltage controlled oscillator (Par. 12-13). One of ordinary skill in the art would recognize that optimization criteria of Vilcocq not only is related to the input of the voltage-controlled oscillator (i.e. output of the loop filter) but also is related to the input to the voltage-controlled oscillator because the output to the PLL includes the output to the VCO in addition to the input to the VCO. Therefore, it would have been obvious to one of ordinary skill in the art to improve the system performance of the digital synthesizer by adapting the transfer function of the filter to the linearized response of the phase locked loop variations.

As to claim 36, Liu discloses that said fractional-N-sigma-delta modulator includes at least: a sigma-delta converter (means 525) coupled to the pre-emphasis filter (means 521 and 522); and a fractional-N phase locked loop unit (means 526) coupled to an output of said sigma-delta converter (means 525). Liu does not expressly disclose that the transfer function of said pre-emphasis filter is to be optimized according to predefined optimization criteria; and wherein said optimization criteria are related to an input to said pre-emphasis filter and are related to an input to a voltage controlled oscillator of the fractional-N-phase locked loop unit. Vilcocq discloses a fractional-N-sigma-delta modulator including a sigma-delta converter (Fig. 2, means 15); and a fractional-N phase locked loop unit coupled to the output of said sigma-delta converter (means 11-14), wherein the transfer function of said pre-emphasis filter is to be optimized according to predefined optimization criteria (Par. 8-13 and 54-55). One of ordinary skill in the art would recognize that optimization criteria of Vilcocq not only is related to the input of the voltage-controlled oscillator (i.e. output of the loop filter) but also is related to the input to the voltage-controlled oscillator because the output to the PLL includes the output to the VCO in addition to the input to the VCO. Therefore, it would have been obvious to one of ordinary skill in the art to improve the system performance of the digital synthesizer by adapting the transfer function of the filter to the linearized response of the phase locked loop variations.

As to claim 37, Liu discloses that the transfer function of the pre-emphasis filter is a finite impulse response (Par. 25).

As to claim 38, Liu discloses that the transfer function of the pre-emphasis filter is an infinite impulse response (Par. 25-26).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to FRESHTEH N. AGHDAM whose telephone number is (571)272-6037. The examiner can normally be reached on 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan can be reached on 571-272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2611

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Freshteh N Aghdam/

Examiner, Art Unit 2611

/Chieh M Fan/

Supervisory Patent Examiner, Art Unit 2611